AF

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of	
Iwao MIYAJIMA	Examiner: Depumpo, Daniel
Serial No.: 09/763,092	Group Art Unit: 3611
Filed: February 16, 2001	
For: SWING ARM FOR TWO-WHEELED MOTOR VEHICLE AND METHOD OF PRODUCING THE SAME	

REVISED APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Responsive to the notice of February 18, 2005, submitted herewith is applicant's Appeal Brief revised to comply with 37 CFR 41.37(c).

Respectfully submitted,

George A. Loud
Reg. No. 25,814

Dated: March 7, 2005

LORUSSO, LOUD & KELLY
3137 Mount Vernon Avenue
Alexandria, VA 22305

(703) 739-9393

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of	)	
	)	
Iwao MIYAJIMA	)	Examiner: Depumpo, Daniel
	)	
Serial No.: 09/763,092	)	Group Art Unit: 3611
	)	
Filed: February 16, 2001	)	
	)	
For: SWING ARM FOR TWO-WHEELED MOTOR VEHICLE AND METHOD OF PRODUCING THE SAME	)	

APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This appeal is from the examiner's final rejection dated August 16, 2004.

I. Real Party of Interest

The real party of interest in the captioned application is TS Tech Co., Ltd., as evidenced by an assignment recorded at reel 11614, frames 0835-0837 in the U.S. Patent and Trademark Office.

II. Related Appeals and Interferences

To the best knowledge of the undersigned, there is no other appeal or interference which will directly affect or be directly affected by or have a bearing on the Board's decision in this pending appeal.

III. Status of the Claims

All pending claims, i.e., claims 14-17, 28 and 29, are finally rejected. Accordingly, the appealed claims are claims 14-17, 28 and 29 and a true copy thereof is attached hereto.

IV. Status of Amendments

All amendments submitted to date have been entered.

V. Summary of the Claimed Subject Matter

As explained in applicant's specification under the heading "Technical Background", beginning at page 1 of the "Substitute Specification", the present invention is directed to a specific problem associated with a specific element of a two-wheel motor vehicle. In particular, the present invention is directed to a problem with the "swing arm" of a motorcycle shown as element 103 in Fig. 22 of applicant's drawings. The specific problem associated with the swing arm, to which the present invention is directed, is generation of noise by resonance with the motor. As noted at page 2, lines 8-11 of applicant's Substitute Specification, in a motorcycle the swing arm is attached in close proximity to the engine and therefore resonates with same. Japanese Utility Model Publication No. 01-106390, of record, establishes that a "swing arm" serves as a wheel suspension member and, as such, should be distinguished from the "main body frame" to which the teachings of Yamagiwa et al (the primary reference in the prior art rejections) are directed.

Applicant's solution to the foregoing problem is to provide a specific type of foam resin within the swing arm to absorb vibration and prevent resonance (page 4, lines 1 to 4 of applicant's Substitute Specification). As described at page 5, lines 4-9 of applicant's Substitute Specification, the raw material of the foam resin is first introduced into the swing arm followed by the "step of foaming the introduced raw material." The pending claims are limited to the preferred embodiments using a urethane foam in admixture with gum-based particles. Claim 28 defines the invention in terms of its preferred embodiment wherein urethane resin and gum-based particles are admixed to form a raw material and that raw material is filled into hollow portions of the swing arm and then foamed. As taught at page 10, lines 13-18, urethane foam (foamed polyurethane) is preferred for its heat resistance, oil resistance and cost. "Further, urethane foam is easily adhered to aluminum and has excellent mechanical properties for absorbing vibrations" (page 10, lines 14 and 15). The presence of gum-based particles in the foamable mixture and resulting urethane foam effectively prevent resonance with engine vibration. See page 11, lines 1 and 2 and page 4, last line to page 5, line 1 of applicant's Substitute Specification. As described at page 11, lines 1-4 of applicant's Substitute Specification, a raw material containing urethane and gum-based particles is preferably foamed to a density of 0.05 to 0.5, as further recited by claim 29.

VI. Grounds of Rejection to be Reviewed on Appeal

The following grounds of rejection are presented for review on this appeal.

A. The rejection of claim 29 under the first paragraph of 35 USC 112 (paragraph 2 of the Final Action).

B. The rejection of claims 14, 15 and 28 for obviousness (paragraph 4 of the Final Action).

C. The rejection of claim 29 for obviousness (paragraph 5 of the Final Action).

D. The rejection of claims 16 and 17 for obviousness (paragraph 6 of the Final Action).

VII. Argument

A. The Rejection of Claim 29 Under 35 USC 112, First Paragraph

Applicant's Specification Inherently Describes the Units for Density Because Those Skilled in the Art Would Recognize the Units on the Basis of the Disclosed Ranges of Density for a Polyurethane Foam.

In applicant's "Supplemental Response" filed August 13, 2002, attorney for applicant argued:

> It is respectfully submitted that those skilled in the art would recognize that applicant's teachings of density are in such units because the density of resin foams is conventionally, in modern practice, given in units of "g/cm^3".

Abstracts of four Japanese Kokai publications were submitted as representative of the conventional usage of density values expressed in terms of "g/cm^3" with the response of

August 13, 2002.

Other art of record supports applicant's contention that those skilled in the art would understand the units for the density ranges taught by applicant's specification to be expressed in terms of g/cm^3. U.S. 4,134,610, U.S. 4,659,618 and U.S. 6,296,299 are noted as references of record teaching densities for polyurethane foams. The most recent of these references, i.e., U.S. 6,296,299 expresses density in terms of "g/cm^3". See Table 1 at column 10 of U.S. 6,296,299. U.S. 4,659,618 also expresses density of a urethane foam in terms of "g/cm^3" (0.05 g/cm^3 - column 6, line 29).

As the examiner has previously noted on this record, density of polyurethane foams have also been expressed in the art in terms of other units. However, the absolute values of the numbers of applicant's ranges teach those skilled in the art that the units are g/cm^3. For example, U.S. 4,134,610, of record, discloses a polyurethane foam used in an automobile bumper "having a density within the range of from about 50 to about 150 g/dm^3, preferably from about 70 to about 120 g/dm^3...," quoting from column 3, lines 22-24. Thus, while U.S. 4,134,610 expresses density of a polyurethane foam in different units (g/dm^3) it does so with absolute values many orders of magnitude higher than those recited by applicant's claims. Thus, the magnitude of the end points of applicant's ranges teaches those skilled in the art that applicant's density ranges are <u>not</u> expressed as g/dm^3 but, rather, as the more conventional g/cm^3.

U.S. 4,978,562 teaches, quoting the title, "Composite Tubular Door Beam Reinforced With a Syntactic Foam Core..." The density of the core, without specification of the material, is given as "from about 15 pounds per cubit feet to about 50 pounds per cubic feet...," quoting from column 7, lines 5-7. Again, the values for density are magnitudes higher than those of the ranges recited by applicant's claims. Finally, U.S. 5,128,196 teaches a density for polystyrene foam of 3.4 pounds/cubic feet, again many orders of magnitude higher than the absolute values of applicant's recited range for density.

Where the disclosure inherently teaches a claimed feature, that feature is "described" within the meaning of the description requirement of the first paragraph of 35 USC 112. *Kennecot Corp. v. Kyocera International, Inc.,* 5 USPQ.2d 1194 at 1197 (Fed. Cir. 1987). The issue is whether or not the specification as originally filed "conveyed in any way to those skilled in the art, to whom it is addressed, the information that appellants invented the... [claimed subject matter]." *In re Smythe,* 178 USPQ 279 at 284 (CCPA 1973). It is respectfully submitted that the four Kokai publications submitted with applicant's paper filed August 13, 2002 and which teach density given in units of "g/cm^3", as well as the other documents of record here, support applicant's position that the test of *Smythe* is met, i.e., that the original specification conveyed a teaching of density understood by those skilled in the art to be expressed in terms of g/cm^3.

B. The Rejection of Claims 14, 15 and 28 for Obviousness

1. The Record Does Not Establish *Prima Facie* Obviousness of the Subject Matter of Claim 28 and Therefore Does Not Establish *Prima Facie* Obviousness of the Subject Matter of Claims 14-17 and 29 Which Depend from Claim 28.

Claim 28 recites, in relevant portion, "mixing a raw material for forming a urethane foam with gum-based particles." Claim 28 further recites that the mixture of urethane foam precursor and gum particles is filled into hollow portions of the swing arm and is then foamed "to form a urethane foam containing the gum-based particles."

Claims 28, 14 and 15 stand rejected for obviousness over Yamagiwa - U.S. 5,375,677 in view of Oki - JP '390 and further in view of Kennedy - U.S. 4,520,139. As the examiner correctly notes, neither Yamagiwa nor JP '390 discloses the use of gum particles in a urethane foam. In this regard, the examiner relies upon the Kennedy patent. Kennedy teaches the production of polyurethane foams "by reacting the selected polysaccharide with a polyisocyanate in an aqueous medium...," quoting from column 1, lines 62-64 of Kennedy. Presumably, the examiner relies upon Kennedy here because of Kennedy's description of his polysaccharide reactants, i.e., the so-called "gel forming polysaccharides", as including guar gum. See column 1, lines 35-38 and lines 52-57 of Kennedy. Indeed, the examiner may be correct that it would have been obvious to use a polysaccharide having the ability to form a gel, "as taught by Kennedy," quoting from the top of page 4 of the final action of August 16, 2004. However, use "as taught by Kennedy" would not lead to the present invention. Kennedy never mixes a urethane raw material

with gum-based particles and the result of what Kennedy teaches would not resemble "a urethane foam containing the gum-based particles" as recited by claim 28. On the contrary, Kennedy teaches use of the gel-forming polysaccharide, in liquid form, as a reactant with a polyisocyanate to form a foam (column 1, lines 60-65). In other words, in Kennedy, the polysaccharide is one of the liquid urethane-forming reactants. Kennedy forms a "B-side mixture" by dissolving the gel-forming polysaccharide, e.g., pectin, in water (column 5, line 63 to column 6, especially column 6, lines 5-7) and then reacts the "B-side mixture" with the "A-side" containing polyisocyanate (column 5, lines 53-58) to form a foamable mixture. Accordingly, the product of Kennedy would not be a polyurethane foam with gum particles dispersed therein and would not be anything resembling same.

While Japanese '390 suggests the separate use of "gum" and polyurethane foam (not a precursor thereof) as a filling material for a swing arm, no reference of record suggests mixing gum particles in a foamable mixture with a "raw material for forming urethane foam", much less the claimed method which requires the mixing of the gum particles with the urethane raw material, followed by filling the hollow portions with the urethane raw material/gum mixture, followed by foaming.

2. Claims 14 and 15 Further Distinguish the Present Invention from the Reference Combination

The main body frame portions 18L and 18R which are filled with foam in accordance with the teachings of Yamagiwa et al have neither a threaded opening which would permit the introduction of the raw material (claim 14) nor an opening at a free distal end which

would permit introduction of the raw material (claim 15). At column 20, lines 45-59 Yamagiwa et al teach that the "main body frames 18L and 18R" include a plurality of openings 42 and 80 "which originate from core prints for supporting thereon cores for forming the inner chambers of the main body frames 18L and 18R." According to Yamagiwa et al the openings 42 and 48, together with "inner windows 32," are "convenient" and eliminate the need for "separately forming openings by machining for pouring raw foaming resin liquid therethrough."

C. The Rejection of Claim 29 for Obviousness (Paragraph 5 of the Final Action)

Claim 29 stands finally rejected for obviousness over a combination of four (4) references, i.e., Yamagiwa '677, JP '390, Kennedy and Lindewall. This rejection differs from that of claims 28, 14 and 15 in the additional citation of Lindewall.

This rejection is traversed for the reasons set forth above in connection with argument "B", i.e., none of Yamagiwa, JP '390 and Kennedy disclose "mixing a raw material for forming a urethane foam with gum-based particles" and "foaming... to form a urethane foam containing the gum-based particles." Lindewall is cited only for its disclosure of density of a urethane foam and has no relevance to the short-comings of the reference combination applied in rejecting independent claim 28, as set forth in argument "B" above.

D. The Rejection of Claims 16 and 17 for Obviousness (Paragraph 6 of the Final Action)

This rejection is traversed for the reason that claims 16 and 17 depend from independent claim 28 which is considered patentable for the reasons set forth above in argument "B".

VIII. Conclusion

For the foregoing reasons, applicant's disclosure is sufficient to convey to those skilled in the art the units for the claimed density ranges and thereby satisfies the written description requirement of 35 USC 112.

Finally, the rejections for obviousness are erroneous because based upon references which, even if *prima facie* combinable, would not have led one skilled in the art to the invention as defined by claims 28 or by the claims dependent thereon. For these reasons, the rejections set forth in the final action should be reversed.

Respectfully submitted,

George A. Loud
Reg. No. 25,814

Dated: March 7, 2005

LORUSSO, LOUD & KELLY
3137 Mount Vernon Avenue
Alexandria, VA 22305

(703) 739-9393

CLAIMS APPENDIX

1-13 (Cancelled)

14. The method for producing a swing arm for a two-wheeled motor vehicle as defined in claim 28, wherein said raw material of the urethane foam is introduced at a threaded opening by which said swing arm is mounted to said two-wheeled motor vehicle.

15. The method for producing a swing arm for a two-wheeled motor vehicle as defined in claim 28, wherein said raw material of the urethane foam is introduced at an opening provided in a free distal end of said arm portion.

16. The method for producing a swing arm for a two-wheeled motor vehicle as defined in claim 14, wherein the openings, other than the opening at which said raw material of the urethane foam is introduced, are closed by means of a mesh sheet.

17. The method for producing a swing arm for a two-wheeled motor vehicle as defined in claim 15, wherein the openings, other than the opening provided at the end of the arm portion to introduce the raw material of the urethane foam, are closed by means of a mesh sheet.

18-27 (Cancelled)

28. A method for producing a swing arm for a two-wheeled motor vehicle having an arm portion and a body portion, both of which have a hollow portion, the hollow portions being at least partly filled with a foam resin, said method comprising:

mixing a raw material for forming a urethane foam with gum-based particles to form a foamable mixture;

filling at least a part of said hollow portions with said foamable mixture; and

foaming said foamable mixture within said hollow portions to form a urethane foam containing the gum-based particles.

29. The method for producing a swing arm for a two-wheeled motor vehicle as defined in claim 28, wherein the urethane foam containing the gum-based particles has a density of 0.050 g/cm^3 to 0.500 g/cm^3.